

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TRACEY E. THIERET

Appeal No. 95-2848
Application 07/796,971¹

ON BRIEF

Before THOMAS, JERRY SMITH and CARMICHAEL, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134

¹ Application for patent filed November 25, 1991.

from the examiner's rejection of claims 1-14, which constitute all the claims in the application.

The claimed invention pertains to a method and apparatus for converting an input image made up of a plurality of pixels into an output image made up of a plurality of pixels. More specifically, input pixels which correspond to an edge region are converted to smooth output pixels by considering the intensity values of pixels which surround the edge pixel.

Representative claim 1 is reproduced as follows:

1. A method of processing an input image having a plurality of input pixels to generate an output image having a plurality of output pixels, comprising the steps performed for each input pixel, of:

a first forming step of forming a first value from intensities of a first set of pixels around the input pixel;

determining whether the first value is a member of a first set of values;

a first setting step of setting an output pixel intensity, corresponding to the input pixel, in accordance with an intensity of the input pixel, if the first value is not a member of the first set of values;

otherwise, a second forming step of forming a second value from intensities of a second set of pixels around the input pixel, the second set of pixels including a pixel that is not included in the first set of pixels;

a second setting step of setting an output pixel intensity, corresponding to the input pixel, in accordance with the second value.

The examiner relies on the following references:

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Kitamura	4,703,363	Oct. 27, 1987
Kojima	5,036,405	July 30, 1991

D. F. Bantz et al. (Bantz), "Anti-Aliasing Video Lookup Table," IBM Technical Disclosure Bulletin, Vol. 27, No 10B, March 1985, pages 6339-6342.

Claims 1-14 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Kitamura in view of Kojima with respect to claims 1, 4, 5, 8, 11 and 12, and adds Bantz with respect to claims 2, 3, 6, 7, 9, 10, 13 and 14.

Rather than repeat the arguments of appellant or the examiner, we make reference to the briefs and the answers for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answers.

It is our view, after consideration of the record before us, that the collective evidence relied upon and the level of skill in the particular art would not have suggested to one of

ordinary skill in the art the obviousness of the invention as set forth in claims 1-14. Accordingly, we reverse.

We consider first the rejection of claims 1, 4, 5, 8, 11 and 12 under 35 U.S.C. § 103 as unpatentable over the teachings of Kitamura and Kojima. Appellant has nominally indicated that dependent claims 4, 5, 11 and 12 are separately patentable from independent claims 1 and 8 and has presented separate arguments in support thereof [brief, pages 5 and 8-9]. Thus, we will consider the rejection of independent claims 1 and 8 separately from the rejection of dependent claims 4, 5, 11 and 12.

Claim 1 is directed to a method for carrying out the invention, and claim 8 is essentially directed to an equivalent apparatus drafted in means plus function format. The examiner has pointed out the teachings of Kitamura and Kojima, has identified the perceived differences between Kitamura and claims 1 and 8, and has provided an analysis as to why Kitamura would have been modified with the teachings of Kojima to arrive at the invention of claims 1 and 8 [answer, pages 3-4]. Appellant argues that the applied prior art contains no guidance of how the features of Kitamura and Kojima could be combined to achieve the claimed invention, and that the motivation to make the examiner's attempted combination does not come from within the prior art.

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For reasons which we will discuss in more detail below, we agree with appellant's position.

As a general rule in rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of

obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

When these rules are considered under the facts of this case, we agree with appellant that there is no basis for the artisan to combine the teachings of Kojima with the teachings of Kitamura in the manner proposed by the examiner. The examiner has recognized that Kitamura fails to suggest the second forming step in which a second intensity value is calculated using at least one different pixel than was used in the first forming step. Kitamura teaches a single calculation step using four pixels adjacent to the pixel of interest. Although Kojima teaches a technique for adjusting a pixel of interest by successively looking at different surrounding pixels, Kojima merely replaces the pixel of interest with one of the surrounding pixel values, and no forming of a second value takes place as recited in the claims. Thus, neither reference teaches the claimed technique of calculating one value as a threshold condition and calculating a second value using at least one different pixel when the threshold is not reached.

We can see no reason why the artisan would seek to modify the Kitamura technique with the technique disclosed by Kojima. Kojima repairs defective pixels by replacing them with good or

previously amended pixels and does not consider the relative intensities of surrounding pixels at all. Additionally, the Kojima technique would not enhance the performance of the Kitamura device, and as pointed out by appellant, would likely result in the edge pixels of Kitamura being less smooth rather than more smooth. There would thus be no motivation to even attempt to apply the pixel correction technique of Kojima to the smoothing technique described by Kitamura.

For all the reasons just discussed, the record in this case does not support the obviousness of the invention as set forth in claims 1 and 8. Therefore, we do not sustain the rejection of claims 1 and 8. Since claims 4, 5, 11 and 12 depend from either claim 1 or claim 8, we also do not sustain the rejection of these claims.

We now consider the rejection of claims 2, 3, 6, 7, 9, 10, 13 and 14 under 35 U.S.C. § 103 as unpatentable over the teachings of Kitamura, Kojima and Bantz. Appellant indicates that these claims stand or fall together [brief, pages 5 and 9-10]. These claims are all dependent claims which depend from either claim 1 or claim 8. For reasons discussed above, the invention of claims 1 and 8 is not suggested by the collective teachings of Kitamura and Kojima. Therefore, the first question

to be considered is whether the teachings of Bantz overcome the deficiencies present in the rejection of claims 1 and 8.

Bantz was cited only for its teaching of using a video lookup table for acquiring anti-aliasing values to be used in smoothing edge pixels. The lookup table is recited only in the dependent claims. Bantz provides no teachings relevant to the formation of first and second values related to the intensities of different sets of pixels surrounding the pixel of interest. Thus, we find nothing in Bantz which corrects the deficiencies in the teachings of Kitamura and Kojima. Therefore, we do not sustain the rejection of dependent claims 2, 3, 6, 7, 9, 10, 13 and 14 as proposed by the examiner based upon the record before us.

In summary, we have not sustained either of the rejections set forth by the examiner. Accordingly, the decision of the examiner rejecting claims 1-14 is reversed.

REVERSED

JAMES D. THOMAS)
Administrative Patent Judge)
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) BOARD OF PATENT

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